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Characteristics of the intellectual processes of the low-income child are presented. The major impoverishment of these children is in the area of language skills. Another characteristic is their poor performance on intelligence tests. In the area of perceptional processes these children can neither discriminate sounds well nor perform well on timed perception tasks. The least difference between low-status and average children is in regard to quantitative skills.

Racial recognition by culturally deprived children appears in their third year. Also there is a predominance of fatherless homes represented by these children.

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POSITION PAPER ON PRE-SCHOOL PROGRAMS

A BRIEF SURVEY OF RESEARCH ON THE CHARACTERISTICS OF CHILDREN FROM LOW-INCOME BACKGROUNDS - Prepared for Commissioner Keppel

by Vera P. Johy (FG)

Efforts to rigorously specify the developmental characteristics of low-income children have been sparse in the behavioral sciences. In the thirties, a number of studies included social-class variables as part of more comprehensive designs aimed at monitoring development. However, only in the last five or six years has there been a revival of interest in, and subsequently, investigation of, the relationship between salient variables of the social environment and the motivational, intellectual and personality characteristics of low-income children.

This cursory review of available findings will be divided into the following sections: (1) intellectual processes (here we find the most substantial studies of low-income children), (2) personality development with emphasis on self-concept, and (3) child-rearing practices among low-income groups.

I. Intellectual Processes

The readiness of the growing child to profit from varied learning experiences, whether in the context of the structured classroom, or in the informal setting of the home, is influenced by the child's willingness and ability to pay attention to the unfolding of life around him. Though attentional processes are increasingly stressed by the research psychologist, little, beyond speculation, has been said about the range and duration of the attention span of low-income children. The ability to shift attention from one source of stimulus input to another (from visual stimuli to auditory stimuli in reaction-time tests) appears to be related to future reading skills (Katz and Deutsch), and seems to differ between groups within the heterogenous* population usually labeled lower-class or

*Though most studies have described differences between socio-economic classes, there has been but a beginning of research (H. Lewis, S. Keller) into the nature of intra-class variations.

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culturally disadvantaged.

A. Language skills: There is wide-spread agreement among research workers and educators that the major impoverishment of low-income children is in their development of verbal skills. McCarthy showed in her classic studies (1930) that low SES children use, on the average, shorter sentences and ask fewer questions than their middle-class agemates. Others have found that these children also have a more limited vocabulary and poorer articulation. This catalogue of measured differences between children from different socio-economic classes and ethnic groups can be expanded substantially. More important, however, is the recognition that though the form of language as spoken by low-income, low-status children clearly identifies them as having lacked certain types of verbal stimulation, it is in their use of language as a cognitive tool that low-income children are most deficient (Bernstein, Jensen, Hess, John).

In support of this distinction one can cite the observation of classroom teachers, the findings on standardized tests, as well as analyses of greater abstraction. An example of empirical findings is the following: when low-income children are asked to give a single "summarizing" response to cards, the details of which they can label adequately, their performance diverges most significantly from middle-class (white and Negro) peers (John).

Research into the experimental modification of the performance of children on learning tasks is also instructive in light of the above statement. When "slow-learning" white and "slow-learning" Mexican-American children were taught to rely upon key words and phrases during the solution of a new task, they were acquiring a rather novel tool. The culturally disadvantaged children profited considerably from this instruction. In contrast, the white children improved but minimally. Jensen's interpretation of these findings is that environmental conditions make a greater negative contribution to the performance of low-income

children (whether Mexican, Puerto Rican, Negro or rural white) than to the performance of slow-learning children of average or high status, who may indeed be genetically disadvantaged.

There is a striking communality between the findings reported from different pre-school programs currently underway. The area of performance which reveals the greatest improvement as a function of pre-school attendance is in language skills (Gray and Klaus, Deutsch, Strodbeck). As yet, there is no equally striking change in more purely conceptual tasks. Clearly, there is a lack of precise knowledge about the way in which language acquired in a communicative context is transformed by the growing child into a tool of thought. This handicaps the educator's efforts to improve the young child's covert use of language.

B. Intelligence test performance: The well-known differential between IQ performance of lower-class and middle-class, and white and non-white American children has been the subject of many controversies within the recent past. Increasingly, psychologists have oriented themselves to specifying the environmental antecedents of this differential. The effects of foster placement have been re-examined (McCandless), showing the impact of placing a lower-class child into a middle-class home. The questions raised by the extreme retardation of the children in the Teheran orphanage, reported by Dennis, have given new impetus to fundamental discussions concerning the growth of learning ability and intelligence (Hunt).

The relationship of the social environment to tested intelligence is considered particularly crucial in children testing in the low average (70 to 90 IQ) range, the spectrum in which a majority of low-income children fall. According to Jensen, it is children of this range who are most likely to profit from an enriched and carefully designed pre-school curriculum. In his own studies, the greatest improvement in performance as a function of experimental instruction

occurred with children in this group.

In examining the intellectually damaging effects of deprived environments, a great deal of research attention has been given to (a) examination of antecedent conditions, and (b) characteristics of the testing situation itself.

In brief, some of the explorations of social-environmental conditions related to "depressed" IQ performance are: the nutritional status of the lower-class mother during pregnancy (Pasamanick and Knobloch studies), the absence or presence of the father in the lower-class home, attendance at pre-school and kindergarten among lower-class children as affecting tested intelligence (Deutsch and Brown). Klineberg's classic study of the effect of length of residence in the North was recently re-examined by Lee in Philadelphia. These studies showed effects to be in the predicted direction.

Though some of the environmental conditions of apparent significance to intellectual development may not be open to modifications through planned social intervention, it is nevertheless important to specify them. Understanding the effects of such environmental conditions places the social scientist in a better position to recommend specialized programs for sub-groups within the larger low-income population (i.e., the recently migrated pre-school child).

The second class of variables under investigation relates to factors within the testing situation itself. The assessment of these variables has produced significant findings and indicated that the manipulation of the following can produce changes in scores on intelligence tests: (1) the sex and race of the examiner (Canady), (2) the verbal or non-verbal saturation of the test as well as the extent of its "cultural bias" (Eells), and (3) acquaintance with "test-taking techniques," the establishment of a meaningful rapport, specialized motivational techniques, etc. (Haggard).

The relevance of these testing variables for the success of a pre-school program may need further elaboration.

Factors which influence test performance may well affect the original process of acquiring skills which are later on measured by intelligence tests. At the present stage of our limited knowledge we cannot ignore the implications of these findings.

C. Perceptual Processes

In order to learn accurately complex patterns of behavior children first have to receive and process sensory inputs in an unhampered manner. As yet, to our knowledge, there are no studies demonstrating significant variations in sensory threshold - or sensitivity - according to the social class status of young children. But such patterns are likely to exist in the ability of children to discriminate accurately among similar sensory inputs. Discriminatory skills are more significantly shaped by experiential factors than are variations in threshold.

It is in the area of auditory discrimination, particularly as related to speech sounds, that class differences emerge. The Wepman auditory discrimination test has been administered to large groups of young children; first-grade low socio-economic status children make significantly more mistakes on this test than middle-class children. The performance of older children correlates but slightly with social class on this test; in this age group, the Wepman test differentiates between good and poor readers within the low SES population. (Deutsch, Katz, Templin.)

Low-income, low-status children show restrictions in performance on perceptual tasks when these are timed. For instance, in testing first-grade children with the SRA Primary Mental Abilities Test, middle-class children performed better than low-class children on the perceptual sub-test. However, these differences between the groups disappeared when the same test was administered to similar groups of children under un-timed conditions (John and Higgins).

Boger reported an interesting study dealing with the training of complex perceptual processes and subsequent gains in IQ performance among rural white and Negro children. The training of the experimental children over a five month period consisted in tasks such as the detection of likenesses and differences in visual stimuli, after completion of which, experimental children showed gains of 8.2 (white) and 6.9 (Negro) in point scores of intelligence tests.

In Covington's study of visual discrimination, low SES subjects made a relatively larger gain in performance than high-status children after a two-week training period. Thus, it seems, that even in the area of perceptual processes programmatic enrichment in the pre-school classroom could contribute to the eventual lessening of performance gaps between lower-class and middle-class children.

D. Quantitative Skills

It is in the area of quantitative skills that performance differences between low-status and average children appear to be least significant. Particularly, if one uses as the basis of comparison the vast difference in verbal skills among these children (Rosner), one may wish to speculate on why this pattern has emerged. Possibly, the fact that many low-income children are expected to perform errands involving money transactions gives them useful preparatory experience with quantitive relationships. On the other hand, it is also possible that, although speech requires prolonged and intensive exposure and practice during the pre-school years of life, numbers may be taught adequately in school with only a rudimentary preparation. Due to certain lacks in their early environment, low income children are particularly handicapped in their language skills. Research to be conducted in the pre-school programs will contribute to the elucidation of these questions.

Mathematical reasoning may reveal, when tested in a variety of ways, larger social class differences than that found with quantitative skills. Beilin has shown differences among children of various social class backgrounds in the judgment of equal and unequal areas. Amy has shown poorer performance on the part of low SES children on the Piaget-type of conservation tasks. It is possible, then, that when low SES children are required to rely upon implicit verbalization in order to analyze a mathematical problem, their difficulties may be due to their limitations in relying upon language as a conceptual tool.

E. Learning Performance in Experimental Settings

Jenson has stated that, insofar as learning is concerned, the principal impoverishment of low-income children is in the development of a verbal mediating network and the use of verbal mediating skills. He found that in associative tasks "culturally-deprived" children made much less use of verbal mediation than control children. The effect of instructions to use labels in some tasks and mediating phrases in others has already been described.

The relative inadequacy of IQ scores in predicting learning rates in an experimental setting was illustrated in a study by Semler and Iscoe. Though full-scale WISC IQ's were significantly lower for Negro subjects as contrasted with white subjects, there were no race differences found in the learning of paired-associates among the subjects of this study.

A number of investigators have been concerned with the question of whether the manner in which children are rewarded for new learning, or correct performance, has differential effects depending upon the child's social class membership. Zigler summarizes a number of studies stating, that "praise will be more effective with lower-class children while reinforcers emphasizing correctness will be more effective with middle class children." He has also reported the finding that abstract reinforcers are less effective with lower class than with

middle class children. In cautioning against too mechanical a view of lower class children, the same author states:

> Rather than viewing social deprivation as a phenomenon, the effects of which are easily built into or out of the organism by external social agents, I have preferred to conceptualize it as a phenomenon which once experienced becomes built into the motivation structure of the child and there mediates the child's interaction with his environment.
>
> - page 10.

II. Personality Development

The periods of particularly severe stress for culturally disadvantaged children are the pre-school years, adolescence, and young adulthood. Knowledge of personality development in disadvantaged groups is relatively sparse; the research which is available centers upon the development of self-concept in Negro children. Following the well-known Clark and Clark study of nursery-age children, investigators have found that racial recognition first appears in the third year of life. This recognition becomes more accurate with each year. Of particular importance is the tendency of young children to assign dark-skinned dolls to inadequate housing and more limited roles. These studies showing that pre-school Negro children tend to prefer white dolls and friends were conducted some two decades ago, and it is possible that similar studies during this period might yield different findings.

The handicaps suffered by disadvantaged children raised in fatherless homes are not only expressed in a lowered IQ score (see above), but seem to be manifested also in greater sex-role confusion, and a need for immediate gratification. The incidence of families with no male adults residing in the home is particularly high among lower-class Negro groups. In connection with these findings one cannot help but stress the importance of recruiting Negro and white teachers into pre-school programs to be developed in disadvantaged neighborhoods.

Children who experience a social environment in which the difficulties of adults are not secret, and wherein the various social ills of the community are but too visible to the very young, view their environment as a far more hostile and dangerous entity than do children who are raised under more protected conditions. (Mussen,) Many who work with disadvantaged children have observed striking changes in motivational and adaptive patterns during pre-adolescence. While young disadvantaged children entering kindergarten seem as eager to please their teachers and "behave well" as their middle-class counterparts, the fourth and fifth grade classrooms in the ghetto schools present teachers with more overtly hostile, active, or deeply withdrawn children. Of particular importance in the context of the developing pre-school program is the opportunity to utilize the readiness for learning of the younger child, who seems less overwhelmed with the consequences of living in a disadvantaged neighborhood.

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